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Mush Creek Watershed
Dallas County and Lowndes County, Alabama

FINAL ENVIRONMENTAL STATEMENT

Kenneth E. Grant
Administrator SCS

Sponsoring Local Organizations

Dallas County Soil and Water Conservation District
A. F. Caley, Jr., Chairman
Marion Junction, Alabama 36759

Mush Creek Watershed Conservancy District
Ralph Hardy, Chairman
Route 1, Box 293
Selma, Alabama 36701

Dallas County Commission
B. A. Reynolds, Chairman
Court House
Selma, Alabama 36701

Lowndes County Commission
O. T. Woodruff, Chairman
Lowndesboro, Alabama 36752

Lowndes County Soil and Water Conservation District
Edward Lyon, Chairman
Route 1
Tyler, Alabama 36785

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U. S. DEPARTMENT OF AGRICULTURE
Soil Conservation Service
Washington, D.C. 20250

USDA ENVIRONMENTAL STATEMENT
Mush Creek Watershed
Lowndes and Dallas Counties
Alabama
Prepared in Accordance With
Sec. 102(2)(C) of P.L. 91-190

Summary Sheet

- I. Draft () Final (X)
- II. Soil Conservation Service
- III. Administrative (X)
- IV. Description of Action: The development of a watershed project in Dallas and Lowndes Counties, Alabama, under Public Law 566. This project includes an accelerated conservation land treatment program and the installation of floodwater retarding structures. The planned combination of conservation land treatment measures and floodwater retarding structures will reduce floodwater damages, including erosion and sediment damages.
- V. Summary of Environmental Impact and Adverse Environmental Effects: Planned conservation land treatment measures will improve the environment by reducing erosion and resulting sediment. Flood protection will be provided to 3,062 acres of flood plain land. Damages occurring on these acres will be reduced by an estimated 67 percent.

The proposed works of improvement will improve the water quality of Mush Creek by reducing the volume of sediment, pesticides, and other pollutants entering the stream. Ground water recharge and spring discharge will be increased by the project measures. Installation of the project will provide about 30 man-years of employment during the five-year installation period.

The use of 887 acres will be affected by the installation of two floodwater retarding structures. This includes the clearing of 203 acres of forest land which will reduce habitat for forest game species.

The sediment and detention pools of the floodwater retarding structures will provide lake-type habitat for fish and wetland wildlife production and 10 to 20 man-days of fishing per acre per year.

The structures and impounded water will cover about 1.2 miles (0.3 acres) of low-value stream fishery habitat and will prevent fish from moving upstream from the lower reaches.

Erosion rates will be increased on 33 acres in the construction areas until adequate vegetation is reestablished.

VI. Alternatives Considered in Project Development

1. Installation of Three Floodwater Retarding Structures and Conservation Land Treatment Measures
2. Application of Conservation Land Treatment Measures Only
3. Flood Plain Acquisition
4. Take No Action

VII. Federal, State, and Local Agencies From Which Written Comments Have Been Received

1. Department of the Army
2. Department of Health, Education, and Welfare
3. Department of the Interior
4. Department of Transportation
5. Environmental Protection Agency
6. Alabama Development Office
 - State Soil & Water Conservation Committee
 - State Department of Conservation and Natural Resources
 - Alabama Geological Survey
7. Mr. Bob Truett: Individual, Birmingham, Alabama
8. Bradley, Arant, Rose & White: Attorneys, Birmingham, Alabama

VIII. Final statement transmitted to CEQ on December 20, 1973
Draft statement received by CEQ on July 3, 1973.

USDA SOIL CONSERVATION SERVICE ENVIRONMENTAL STATEMENT

Title of Statement: The Mush Creek Watershed Project. Lowndes and Dallas Counties, Alabama.

Type of Statement: Draft () Final (X)

Date: October 1973

Type of Action: Administrative (X)

Statement:

1. Description

Authority For Project: Federal assistance through Public Law 566, 83rd Congress, 68 Stat. 666, as amended.

Sponsoring Local Organizations:

Mush Creek Watershed Conservancy District, Dallas County Commission, Lowndes County Commission, Dallas County Soil and Water Conservation District, Lowndes County Soil and Water Conservation District.

Purpose of Project: Watershed protection and flood prevention.

Project Measures: The project consists of the application of conservation land treatment measures and the installation of two flood-water retarding structures.

Environmental Setting:

Mush Creek Watershed comprises a drainage area of about 38,726 acres in Lowndes and Dallas Counties, Alabama. Of this total, 12,998 acres are in Lowndes County and the remaining 25,728 acres are in Dallas County. The watershed is located 36 miles west of Montgomery, Alabama (population 129,375), and 12 miles south of Selma, Alabama (population 26,941). The watershed is about 14 miles long and has an average width of about four miles. Mush Creek originates near the community of Collirene, Alabama, in western Lowndes County and flows in a westerly direction to its confluence with Cedar Creek. In turn, Cedar Creek outlets into the Alabama River about three miles further to the west.

Present land use includes 6,700 acres cropland, 8,660 acres grassland, 22,229 acres forest land, and 1,137 acres of miscellaneous uses. Future land use with project installed will include 7,609 acres row crops, 8,978 acres grassland, 21,249 acres forest land, 890 acres of miscellaneous uses. Future land use without project on the 3,062 acre flood plain is expected to be 2,257 acres cropland, 605 acres grassland, and 200 acres of forest land and idle. Future flood plain land use with the project measure installed is expected to be 2,300 acres of cropland, 600 acres of grassland, and 162 acres of forest land and idle.

Present land use trends indicate that an estimated 1,450 acres of forest land in the watershed will be converted to crops and pasture during the next ten years. This will occur primarily in the uplands. Soybeans have become a major crop in the watershed in the last ten years, and this accounts for most of the anticipated conversion. The net loss of forest land is expected to be 980 acres as 470 acres of crops and pasture on the upland areas will be converted to forest land use. The economy of the watershed is oriented around the production, marketing, and processing of agricultural products and services.

Major farm enterprises are the production of soybeans, cotton, beef cattle, and forest products. The net return from row crop production in the flood plain is marginal because of the flood hazard.

The 19,029 acres of upland forest type, by far the largest single type, are found in relatively large tracts of loblolly-short leaf pine. The 3,200 acres of bottom land hardwood forest types are mainly oak-gum-cypress. These forests were heavily cut over some sixty years ago. The resulting stands are generally well stocked with hardwood pole timber, sweetgums, and water oaks.

Lowndes County is eligible for benefits under the Public Works and Economic Development Act of 1965. According to the 1969 Census of Agriculture, about 63 percent of the commercial farms in Lowndes County had gross sales of less than \$2,500 and 20 percent had gross sales exceeding \$10,000. In Dallas County, about 68 percent of the commercial farms had gross sales of less than \$2,500 and 15 percent had gross sales exceeding \$10,000. There are about 60 farms in the watershed. The flood plain is divided into relatively large privately owned farms. These farms range in size from 20 to 5,000 acres, with the average size being approximately 450 acres. Land values range from \$150 an acre in the upland to \$400 an acre in the flood plain.

Taxation in the watershed is based on the assessed value of real property. Dallas County had a tax base in 1971 of \$70,950,700. Lowndes County had a tax base in 1971 of \$11,760,400.

Unemployment rates as of September 1972 were 6.9 percent in Lowndes County and 4.9 percent in Dallas County. Total work forces in Lowndes and Dallas Counties are 4,080 and 20,370 respectively. The major sources of employment in Lowndes County in order of importance are (1) agriculture, (2) manufacturing, (3) wholesale and retail trade, (4) construction, and (5) service. The major sources of employment in Dallas County in order of importance are (1) manufacturing, (2) wholesale and retail trade, (3) government, (4) service, and (5) agriculture.

During the past ten years, employment in Dallas County has increased 39 percent in the manufacturing industry, 15 percent in wholesale and retail trade, 27 percent in government, and 44 percent in service industries; and has decreased 40 percent in agriculture. During the same ten-year period, employment in Lowndes County has increased 89 percent in the manufacturing industry, 31 percent in wholesale and retail trade, 800 percent in construction, and 33 percent in service industries; and has decreased 40 percent in agriculture. Civilian work forces in Dallas and Lowndes Counties have increased 13 percent and 10 percent respectively during this period of time.

The soil and water conservation land treatment program in the watershed is about 60 percent complete. Conservation plans have been made for about 82 percent of the watershed area. Conservation plans have been completed on about 44 farms.

Soil resources in the flood plain consist of clays, silty clays, and sandy clays and are in land capability subclasses IIw and IIIw. Upland soils include Savannah and Kipling while the flood plain soils consist mostly of Kipling and Leeper soils.

Domestic water supplies in the watershed come from dug and drilled wells. Ponds provide the major source of water for livestock.

Wildlife resources range from low to moderate. Rabbit, quail, deer, turkey, and squirrel are moderate in number. Dove populations are low. Fox, raccoon, and other furbearers are moderate in number. Waterfowl, with the exception of wood ducks, are of little importance. A small population of wood ducks utilize the limited beaver pond type habitat and portions of Mush Creek.

At present the estimated annual hunting pressure on wildlife in Mush Creek Watershed is as follows: deer 400 man-days, turkey 440 man-days, squirrel 488 man-days, rabbit 249 man-days, quail 350 man-days, dove 300 man-days, and miscellaneous (fox, crow, bobcat, raccoon) 395 man-days.

Recreational opportunities within the watershed consist of fishing in farm ponds and Mush Creek, and the hunting of wildlife species described earlier. Recreational opportunities outside the watershed include boating, skiing, picnicking, fishing, and camping on the Alabama River. Available nearby are a number of recreational opportunities offered in the form of hunting clubs, fishing clubs, golf clubs, camping sites, and swimming clubs. According to the Alabama Statewide Comprehensive Outdoor Recreation Plan, there are 82 types of recreational opportunities in Dallas and Lowndes Counties.

The fishery resources of Mush Creek and its tributaries are of low value. Principal species of sport fish are bass, bluegill, mullet, bullhead, channel catfish and various sunfishes.

Fishing activity in Mush Creek Watershed is mainly in ponds. Presently, ponds supply about 3,000 to 4,000 man-days of fishing per year. According to a field survey conducted by the Department of Conservation and Natural Resources, 16 of the 50 surface acres of Mush Creek proper support a fisheries resource. This area provides about 100 man-days of fishing per year.

The quality of water in Mush Creek is best suited for fishing, propagation of fish, aquatic life, and wildlife. It is not acceptable for swimming and water-contact sports or as a source of water supply for drinking or food-processing.

Mush Creek has been classified as a low-value stream fishery habitat and at present is used mainly for livestock water. The stream is about 14 miles long with an average flow depth of 1.5 feet and an average width of 30 feet.

Of the 39.1 miles of streams in Mush Creek Watershed, approximately 20.2 miles have perennial flow. The remaining 18.9 miles have intermittent flow. All channels in Mush Creek Watershed are unmodified, well defined natural channels.

Damaging floods occur along Mush Creek one to three times each year causing an estimated average annual flood damage of \$55,400. Flooding has increased the management problems relating to proper use of bottom land soils. Many landowners are growing row crops on the less suited uplands rather than on the flood plain. This results in less income as well as increased erosion of the upland. The quality of agricultural products is decreased by flooding, resulting in reduced income to farmers from the sale of agricultural products. The most notable flood damages occur to crops, pastures, roads, bridges, and fences. Flooding also causes scour and sediment damages to flood plain lands and indirect damages such as transportation interruptions because of road and bridge "washouts."

Erosion damage is moderate in the watershed. Erosion averages 3.8 tons per year from each acre in the watershed. This erosion is mostly from crop and pastureland. However, there are 103 acres of critically eroding land in the watershed which are major sediment contributing areas.

Flood plain erosion damages about 275 acres. This damage results from minor scour channels. Sheet erosion causes a reduction in soil

fertility and exposes less fertile, more easily erodible subsoil to attack by wind and water.

Sediment being deposited on the flood plain consists of fine-grained material or sand deposits which are less productive than the underlying soil. These sediment deposits cover about 48 acres of flood plain land causing \$300 average annual damages.

Sediment transported by Mush Creek enters Wm. F. Dannelly Reservoir and adds to sediment deposition and turbidity in the Alabama River System. The present average annual sediment yield at the mouth of Mush Creek is about 59,000 tons. Approximately 20 percent of this material is sand or gravel and about 80 percent is silt and clay-sized material.

A fish and wildlife resource problem exists in the watershed because of a lack of fish and wildlife management. A need exists for properly managed fish ponds and improvement of food, cover, and water for small game.

The Mush Creek Watershed project consists of the application of conservation land treatment and installation of structural measures. Installation of land treatment measures will be accelerated during the first five years following project approval. The Soil Conservation Service, U. S. Forest Service, and the Alabama Forestry Commission will provide technical assistance for installation of this accelerated program. Land treatment to be applied on cropland includes conservation cropping systems, terraces, waterways, field borders, and drainage systems. Measures to be applied on pastureland include pasture planting, pasture management, drainage, and farm ponds. Land treatment measures to be applied for wildlife include wildlife upland habitat management and wildlife wetland habitat management. Land treatment measures on the forest land consist of 470 acres of tree planting, 5,780 acres of stand improvement measures, fencing for animal control on 2,200 acres, and cooperative forest fire control. These land treatment practices are necessary to reduce runoff and erosion, provide adequate water disposal systems for the crop and pastureland, improve woodland management, and provide food and habitat for wildlife.

Structural measures to be installed consist of two floodwater retarding structures. A water level control gate will be installed in each structure to permit seasonal variation of water levels in the sediment pools. The control gates will be operated manually. These provisions will permit management of the pool area for waterfowl. During low water levels, the exposed area will be planted to Japanese Millet. When the millet becomes mature, the water level will be raised to create feeding areas for waterfowl. These plantings will help mitigate the damages to waterfowl habitat along the stream channels and in the flood plain where the structures are being installed.

In the construction areas, appropriate vegetation will be established as soon after construction as possible. During construction the guidelines for minimizing soil erosion and water and air pollution provided in SCS Engineering Memorandum-66 will be followed. These guidelines include such measures as temporary vegetation, mulch, dust control and seasonally timed construction. Land clearing and other construction debris will be disposed of in accordance with state air pollution and solid waste regulations.

Floodwater retarding structures installed will be maintained by the sponsoring local organizations, with consultative assistance from the Soil Conservation Service. The sponsoring local organizations will adequately fertilize vegetation on structures and adjacent areas as needed to maintain a vigorous growth for protective ground cover. Trash racks and emergency spillways will receive periodic cleaning.

The sponsoring local organizations and a representative of the Soil Conservation Service will make a joint inspection annually. Other inspections will be made after severe floods and after the occurrence of any unusual condition which might adversely affect the structural measure. These joint inspections will continue for three years following installation of the structure. Inspection after the third year will be made annually by the sponsors. A report of the inspection will be prepared and a copy sent to the Soil Conservation Service employee responsible for operation and maintenance inspections and follow-up. Where needed, the Soil Conservation Service employee may continue to provide assistance after the third year as determined by the State Conservationist.

Items of inspection for dams will include, but are not limited to, the condition of the principal spillway, the outlet channel, the embankment, the emergency spillway, the vegetative cover, and other appurtenances of the structure.

The total estimated installation cost of land treatment and structural measures is \$1,298,200. Total estimated land treatment cost is \$471,300 and total estimated structural measures cost is \$826,900.

Some changes in land use will occur as a result of installing the proposed project. The borrow areas, spillways, and embankments of the two floodwater retarding structures will occupy 60 acres of land that are expected to have a future without project land use of 33 acres forest land, 17 acres pasture, and 10 acres row crops. The dams, spillways, and borrow areas will be vegetated to prevent soil erosion. Installation of the floodwater retarding structures will require 827 acres for the sediment and detention pools. The sediment pools will cover 213 acres which will be covered in water and/or sediment.

This will require clearing 170 acres of forest land and will involve 40 acres of pasture and 3 acres row crops. The flood pools will occupy 614 acres. The use of this area is presently 257 acres of forest land, 310 acres of pasture, and 47 acres of row crops. The forest land and pasture areas can remain in the flood pools in their present use; however, the 47 acres of row crops will have to be changed to a use that is compatible with periodic flooding.

The type forest land to be cleared in the sediment pool, borrow areas, spillways, and dam site is loblolly-short leaf pine. Principal species are loblolly pine, mixed oaks, sweet gum, and red maple. The stands contain both timber and pulpwood. The forest land to be cleared, which represents less than 1 percent of all the forest land in the watershed, serves as good den areas and travel lanes for squirrel. These forest land areas in the watershed also provide good habitat for rabbit, fox, turkey, and deer. These forest lands also provide good food for turkey. Small grain fields provide good sources of food for quail, dove, and rabbit. Pasture to be covered in water and/or sediment provides some grazing for deer and wild turkey.

In the spring of 1972 archeological investigations of the watershed were conducted by the University of Alabama Museums, University of Alabama, Moundville, Alabama. The study revealed one site of significant interest. It is located just north of proposed flood-water retarding structure number five between the two laterals extending from the main pool area (See Appendix C). It is approximately 4.7 acres in size with one acre located between top of dam and two feet above emergency spillway crest elevations. Relative to this site the letter report of the investigation states: "This appears to be a large and interesting site; in a short time, we surface-collected enough material to fill a large grocery bag. The great bulk of this material is stone, in the form of projectile points (over three dozen so far), 'knives', scrapers, other tools, and chipping debris. We only came up with four potsherds. Most of the material probably was made during the 'Archaic' period, and probably dates to before 1000 B.C." The report makes the following recommendation: "The next step for us is to determine whether or not the site has any depth, any undisturbed levels beneath the plow zone. We talked to the landowner, Mr. Ralph Hardy, today, and he said it would be fine with him if we tested it in the area which would be flooded. We are presently in the middle of our regularly scheduled surface survey, but expect to have time to make this test in about a month. We believe that the site very likely does not have any depth beneath the plow zone, but that it is worth a 5' x 5' test pit anyhow." The subsurface investigation has not been completed; however if undisturbed material is found beneath the surface,

Dr. C. Roger Nance of the University of Alabama in Birmingham has expressed interest in conducting salvage excavations.

The Alabama Historical Commission has been furnished a copy of the proposed project plan with a request for information concerning any historic districts, sites, buildings, structures, and/or objects that might be affected by installation of project measures. The project as planned will not affect any cultural resources listed in the National Register of Historic Places.

During construction of project measures a government inspector will be present at all times. In addition to overseeing proper installation of measures, he will be charged with the responsibility of recognizing artifacts of significance that might be uncovered and notifying the State Conservationist of the Soil Conservation Service of such findings. The State Conservationist will immediately notify the Department of the Interior; Chairman, Department of Anthropology, University of Alabama; and Alabama Historical Commission. In such an event the provisions of Public Law 86-523 will be followed.

2. Environmental Impact

Land treatment measures will reduce erosion by about 36 percent and flood damages by about 5 percent. These measures, combined with floodwater retarding structures, will reduce flood damages by about 67 percent. Land treatment and structural measures will reduce erosion damages by about \$2,300 annually or 61 percent. After project installation, sedimentation on the flood plain will be reduced about 83 percent. Installation of the project measures will reduce watershed sediment yield an average of 28,000 tons per year, a 47 percent reduction in sediment transported by the stream. Treatment of 103 acres of critically eroded land will account for 7,000 tons per year of this reduction in sediment.

Land treatment measures on forest land include timber stand improvement which will release overstocked immature stands. Stand improvement measures alone should increase the net annual growth of growing stock by at least 5 percent over the next decade. As a result of this increased growth, a humus layer will be developed more rapidly. This will increase water absorption and decrease runoff. The fire hazard in the stand improvement area will increase temporarily from the presence of dead and dying material. This will not require additional fire fighting equipment to be committed to the watershed.

Thinning or improvement cutting will "open" timber stands, allowing sunlight to promote growth of herbs and low-growing plants. This will enhance wildlife food supply as well as increase the quality of the timber stands. There will be some effect on the on-site soil movement in the area. A slight increase in erosion and sedimentation is expected as a result of timber thinning operations.

The loss of timber products resulting from land clearing will be partially offset by converting 470 acres of open upland to forest production. There should be some increase of wildlife food on the newly forested areas before the stands reach sufficient height to shade out the low-growing wildlife food plants. There will be a loss of the grazing resources for cattle on 2,650 acres of forest and open land. This loss will result from exclusion of grazing animals from planted and overgrazed areas. However, there will be an increase of wildlife food supply as a result of this practice.

The conversion of 1,450 acres of forested land to crop and pastureland will provide a higher net return to farmers. This conversion will result from the introduction of soybeans as a major cash crop in this region of Alabama. As farmers attempt to maintain their present cattle operations and expand into soybean production a need exists for more open land. There will be a net decrease of 4 percent in forest area with most of the reduction occurring in the uplands. This conversion will be harmful to some species of wildlife. Clearing of these areas will increase erosion on the acres converted from forest; however, as previously stated, other land use changes and conservation treatment will have the net result of reducing total erosion by 36 percent.

The water quality of Mush Creek is expected to be improved by the proposed project measures. An immediate effect will be reduction of sediment loads in those tributaries immediately below structures and, to a lesser degree, downstream. The long-range effect will be the improvement of surface water quality throughout the watershed. Vegetative cover and conservation land treatment measures will retard runoff and increase infiltration, and thus reduce the amount of sediment entering the streams. Reduction in runoff and sediment transport will have the effect of reducing water-borne pesticide transport since some pesticides travel on soil particles. Reduction in flooding will also have the effect of reducing water-borne pesticides by reducing the frequency and extent of flood flows over croplands which have had pesticide application.

Conservation land treatment will improve infiltration and reduce runoff by 4 to 5 percent. This reduction in runoff will add to the soil moisture supply. Some seepage from reservoirs is expected which will result in saturation of stream beds and channel banks below the impoundments. Little change in stream flow is expected as a result of the project; however, any change would be in the direction of increasing base flow.

Ground water recharge will not be materially affected by the project. There are no important aquifer recharge areas in the watershed.

The soils, alluvial material and underlying geologic formations are dense and relatively impervious so that, even though infiltration will be increased, there will be no change in ground water recharge.

The project will reduce flooding which will improve the health, safety, and welfare of human life by reducing the amount of refuse and debris deposited on the flood plain. The spread of disease by floodwater or by water-borne material will be reduced.

The reduction in floodwater damages will affect approximately 17 landowners and about 25 full-time employees. This reduction in flooding will allow landowners to more efficiently utilize their resources. More intensive use of existing cropland will be realized on about 730 acres.

The construction of the two floodwater retarding structures will affect the environment by using 170 acres of forest land, 40 acres of pastureland, and 3 acres of cropland for water and/or sediment storage areas. This area will be lost for the above uses throughout the functional life of the structures. The clearing of 170 acres of forest land will affect wildlife dependent upon forest land for cover and food. The acres that are cleared will no longer provide food, cover, or travel lanes for many animals. The detention pools require 614 acres which include 257 acres of forest land, 47 acres of cropland, and 310 acres of pastureland. The cropland will be changed to forest land or pastureland of a type that will tolerate frequent flooding. The 257 acres of forest land in the detention pools are expected to remain in forest land and will provide habitat for wetland wildlife. The 60 acres of land needed for the dams, spillways, and borrow areas will be cleared; however, only 33 acres are in forest land at the present time. In the future these 60 acres can be used for controlled grazing. This area will also provide food and cover for some species of wildlife.

The project will affect the local economy by increasing income in five ways: (1) reducing the expense of replanting, (2) reducing crop losses from floods, (3) enabling farmers to produce a better quality crop, (4) improving conditions for harvesting crops, and (5) increasing net income by reducing damages to fixed improvements.

The installation of project measures will provide increased employment opportunities for the 6.9 percent unemployed in Lowndes County and the 4.9 percent unemployed in Dallas County. The installation of project measures over a five-year period is expected to provide the equivalent of about 30 man-years of employment.

Project installation will provide an average annual reduction in damages to roads and bridges of \$450. This savings will allow these public funds to be used for other valuable services for the local people. Flooding which caused roads to be closed will be reduced; and as a result, school buses can get to destinations, mail will be delivered on time, and workers will be able to get to their jobs. The number of roads on which flooding will be reduced is: state roads (1), railroads (1), and secondary roads (1). The installation of Structure No. 2 will require the relocation of one unpaved road.

A reduction in flooding of real property will increase the tax base of these properties. Based upon current tax structure and the estimated increased value of land, the project will increase annual tax revenue by \$170. This increased tax return can be used for providing better schools, roads, hospitals and other public services.

Change in tax revenue for the land inundated by the two FWRS was not calculated since the tax structure does not recognize this as a loss. If there is a change, it will be in an upward direction based upon the fact impounded water is a definite asset to the cattle industry in this area of Alabama.

The project will produce secondary benefits. Increased income will "stem from" demands for transportation, processing, and marketing the increased production of goods. Additional benefits will be "induced by" the project since larger expenditures will be necessary to achieve the increased production.

Although not designed specifically for fish production, the sediment pools of the floodwater retarding structures will provide 213 acres of lake-type fish habitat. The reservoirs will receive some use by migrating ducks which travel through the area each fall and spring. Additional wetland wildlife species which are expected to use these reservoirs are the killdeer, snipe, beaver, raccoon, muskrat, and bullfrogs.

The 213 acre sediment pools may be stocked with fish at the landowner's request. Fish are usually furnished by the Alabama Department of Conservation and Natural Resources. Stocking of these impoundments with fish will increase fish populations in the streams by out-migration of fish from the pools both downstream and upstream from the structures. The

fishing in these reservoirs will provide approximately 10 to 20 man-days of fishing per acre per year of about 20 to 40 pounds of harvestable fish per acre per year. The project will also be beneficial to fish and wildlife by reducing the amount of silt in streams after vegetation has been established on disturbed areas. As the sediment pools fill with sediment, they will become less desirable for fish production, but they will still be beneficial to fish downstream by reducing sediment. The floodwater retarding structures, by reducing flooding, will contribute to increased reproduction of ground nesting birds and wildlife in the flood plain; however, such birds and animals nesting in the 614 acre flood pools will have reduced reproduction. The floodwater retarding structures will halt the upstream movement of fish at the installation point. The sediment pools and dams will cover about 1.2 miles of low value existing stream fishery habitat.

The impoundments created by the floodwater retarding structures will provide limited recreational activities to the landowners and others. These activities could cause an accumulation of litter around the structures. This litter will make the environment less attractive around the structures and in some cases could cause pollution in the pool areas and downstream from the structures. The county health department will inspect these sites to assure that no unhealthful conditions exist because of the recreational activities. The county health officer has the legal authority under Alabama law to make such inspections. The sponsors will be responsible for all cleanup operations.

Based on a 100-year evaluation period, the total average annual benefits resulting from the project are estimated to be \$60,700 with average annual cost being \$45,700. The benefit-cost ratio for the project is 1.3:1.0. An economic summary (Appendix A) is attached.

3. Favorable Environmental Effects

- a. Land treatment measures and better land use will reduce erosion by about 36 percent.
- b. Floodwater damages will be reduced by 67 percent on 3,042 acres of flood plain land and will directly benefit 17 landowners and 25 full-time employees and their families.
- c. Stand improvement measures alone will increase the net annual growth of growing stock by at least 5 percent over the next decade.
- d. Thinning or improvement cutting of timber will allow sunlight to promote growth of herbs and low-growing plants which will enhance wildlife food supply.
- e. Installation of the project measures will reduce sediment by about 28,000 tons per year, a 47 percent reduction.
- f. The water quality of Mush Creek will be improved by the proposed works of improvement.
- g. Reduction in flooding will improve the health, safety, and welfare of human life.
- h. The project will provide about 30 man-years of employment.
- i. Money presently used to repair flood damages to roads and bridges can be used for schools, hospitals, etc.
- j. A reduction in flooding will increase the tax base of real property which is affected by flooding.
- k. Two hundred and thirteen surface acres of water created by sediment pools will provide fishing and wetland habitat.
- l. Transportation and marketing conditions will be improved.
- m. A reduction in flooding will improve the success of ground nesting birds and animals within the flood plain.

4. Adverse Environmental Effects Which Cannot Be Avoided

- a. Improved forest land management will result in a loss of grazing resource on 2,650 acres of forest and open land.
- b. Forest land wildlife will be harmed by the loss of food and cover due to the clearing of 203 acres of forest land in the construction area.

- c. The sediment pools of the two sites will inundate about 1.2 miles of low-value existing stream fishery habitat.
- d. Recreation activities around the sediment pools could cause a litter problem.
- e. Conversion of 1,450 acres of forest land to crop and pastureland will cause a loss of forest land wildlife habitat.
- f. There will be temporary soil disturbance from the forest thinning operation which will cause an increase of soil loss from both on-site and off-site movement.
- g. Timber production will be lost on 170 acres to be cleared in the sediment pools and 33 acres to be cleared for the dams, spillways, and borrow areas. In addition, 57 acres of pasture and 13 acres of row crops will be lost when the sediment pools, dams, spillways, and borrow areas are constructed.
- h. Flood pools will reduce the success of ground nesting birds and animals on 614 acres.

5. Alternatives

An alternative consisting of Structure No. 2 and two smaller floodwater retarding structures and land treatment was considered. This combination of project measures would cost an estimated \$1,359,100. Preliminary estimates indicated this alternative would reduce floodwater damages an average of 44 percent. This alternative would require an estimated 700 acres to install the three floodwater retarding structures. Approximately 180 acres would be cleared if these structures were installed. The flood pools of the three sites would inundate about 1.1 miles of low value existing stream fishery habitat.

The installation of land treatment measures alone was considered as an alternative. The estimated cost of this alternative is \$471,300. Floodwater damages would be reduced by about 5 percent (\$2,100) as a result of applying land treatment measures, with about 45 percent floodwater damages remaining. These measures would reduce erosion damages by about 33 percent, improve wildlife habitat, increase farm income, help preserve the land, and reduce sediment deposition. Timber stand improvement, a land treatment practice, would cause a temporary increase in the fire hazard. This hazard would occur as a result of the accumulation of dead and dying material associated with timber stand improvement. There would be temporary soil disturbances from the forest thinning operation which would cause an increase of soil loss from both on-site and off-site movement.

An alternative would be to purchase the flood plain and convert it to less intensive use. The flood plain could be managed for timber production and/or production of fish and wildlife. The estimated cost of this alternative is \$1,212,800. An additional estimated cost for relocation of displaced farm landowners is \$34,000. This cost would be incurred in helping landowners secure land to replace that which was purchased. An increased demand for land outside the flood plain would occur. Landowners that own land both in the flood plain and in the upland portions of the watershed would use the upland areas more intensively. This would cause land that should be used for grassland or forest land to be used for cropland, resulting in increased erosion on the uplands and sediment deposition damages downstream. Crop and pasture damages in the flood plain would no longer occur. More intensive agricultural use of adjacent lands outside the watershed would occur because present flood plain landowners would shift production to these areas. Land prices in surrounding areas would increase as farmers try to maintain their present land resource base by buying land to replace that purchased. Landowners that are not able to replace their flood plain land would incur a loss of agricultural income unless production on remaining land can be increased.

Flood plain lands purchased would result in a loss of state and county tax revenue if the acquired land is allowed to revert to its natural state. More intensive use of adjacent lands would offset this reduction in tax base to some extent. If the land is purchased by a federal, state, or local agency, tax revenue from flood plain land would be completely lost.

If a federal, state, or local agency owned the flood plain, the area could be opened to the public for hunting or fishing. This alternative would result in less floodwater damage since the flood plain would revert to native trees and grasses, reducing damageable values. Some flood damages, such as erosion and sedimentation, would remain due to increased runoff caused by more intensive farming of uplands. Road and bridge damages would remain about the same.

One obvious alternative is to take no action to alleviate land and water resource problems in the watershed. This alternative would not require expenditure of funds. However, there would be an estimated \$15,000 of net average annual benefits foregone. Application of this alternative would not require land clearing or changes in existing conditions. Crop and pasture, fence, road and bridge, scour, and sediment damages would continue to occur at an average annual rate of \$55,400. The flooding problem may force landowners to use flood plain areas less intensively. If a conversion from cropland to grassland was necessary, net income would be reduced. Farmers would then shift their row crops to the upland, resulting in increased erosion and sedimentation in the watershed. In addition, production and net income would be reduced because uplands are not as productive as flood plain lands.

6. Relationship Between Local Short-term Uses of Man's Environment and the Maintenance and Enhancement of Long-term Productivity

In consideration of future trends in Mush Creek Watershed, the expected future land use will remain agriculturally oriented. The watershed is located in a rural area where farming is the main source of income. Based on this fact, the land in Mush Creek Watershed will be used primarily for the production of soybeans, pasture, and timber. The project will allocate a total of 887 acres of land for the two floodwater retarding structures. Approximately 213 acres of moderate-value upland wildlife habitat will be inundated and upland wildlife habitat values will be reduced on an additional 614 acres due to periodic flooding.

The 60 acres required for the dam, spillways, and borrow areas will be lost for crop, pasture, and forest land production until adequate vegetation is reestablished. At this time, the area can be used for controlled grazing. The two sediment pools and dams will cover 1.2 miles of existing low-value stream fishery habitat. Wetland habitat and lake-type warm water fishery habitat will result from the impoundment of 213 surface acres of water by the two structures.

It is anticipated that this project will be compatible with the long-term uses of the land, water, and other natural resources. This project will help local watershed inhabitants more effectively utilize these resources in the future.

The short-term removal of forest products through thinning operations will produce usable material and will not adversely affect the long-term productivity of the forestry resource of the area. The short-term effects of protection of the forest land grazing resource through fencing will enable the vegetative cover to regenerate and protect the surface of the area. This should significantly add to the long-term productivity of the area. The trees planted and protected on the upland portions of the watershed will reduce the effect of past erosion and enhance the long-term productivity of those areas.

The proposed conservation land treatment measures to be established during project installation period and maintained throughout the life of the project will enhance wildlife habitat, reduce erosion and runoff, and conserve the natural resources during and after the project's designed life. While the floodwater retarding structures have a designed life of 100 years, they are expected to function beyond this period of time. The benefits were evaluated on a 100-year period and since the floodwater retarding structures will continue to function longer than 100 years, benefits will continue to accrue.

A number of projects will have a cumulative effect on the economy of the area. Upper Big Swamp, Lower Big Swamp, and Mush Creek Watersheds

will provide an estimated 227 man-years of employment. This employment will not only affect those who are involved in construction of these projects, but secondary effects will occur in the local economy. An increased demand for local goods and services will occur as a result of the 227 man-years of employment.

The installation of project measures on the above mentioned projects will have cumulative effects on the lower Alabama River Basin, particularly in reduction of turbidity, and sedimentation in William F. Dannelly Reservoir. These three project areas total 348 square miles or about one percent of the 23,600 square miles in the Alabama River Basin. The uncontrolled tributary area of Dannelly Reservoir is about 4,400 square miles and these three projects comprise 8 percent of the uncontrolled or sediment contributing area and will affect sediment accumulation and suspended sediment load in Dannelly Reservoir.

Erosion rates on Mush Creek Watershed average 3.8 tons per acre per year without the project and will be reduced to 2.4 tons per acre per year after conservation land treatment. Erosion from Big Swamp Creek Watershed (both upper and lower projects) averages 9.3 tons per acre per year without the project and will be reduced to 6.4 tons per acre per year after the project is completed.

Sediment storage provided in planned reservoirs on Mush Creek, Upper Big Swamp, and Lower Big Swamp Creek Watersheds totals 11,027 acre-feet in 36 reservoirs having a total of 1,654 surface acres. The completion of all reservoirs and conservation land treatment in the three watersheds will reduce the average annual sediment load of the Alabama River at Millers Ferry Lock and Dam from about 4.8 million tons to about 4.6 million tons; a 5 percent reduction in total sediment transported by the river.

The effects of the three small watershed projects will be much greater in the vicinity of the mouths of the creeks than on the main body of the reservoir and will be reflected in enhanced aesthetic, recreational, and fish and wildlife values. Sediment loads will be reduced 47 percent in Mush Creek at its mouth and 57 percent in Big Swamp Creek at its mouth. Average annual suspended sediment concentration will be reduced from 794 to 417 parts per million at the mouth of Mush Creek and from 1,114 to 479 parts per million at the mouth of Big Swamp Creek.

The cumulative effects of these proposed projects will have a net beneficial affect on local fish and wildlife resources. Stream fishery habitat will be destroyed for a short period following channel modification that involves excavation. Stream fishery habitat will be damaged to a lesser extent where clearing and snagging are planned. After ten to fifteen years, streams should have regained a carrying

capacity equal to or exceeding that existing prior to channel modification. The long-term effects of the projects tend to improve fishery habitat through decreased sediment movements and accumulation. In the three P. L. 566 projects, 36 proposed floodwater retarding structures will provide approximately 1,654 acres of lake-type fishery habitat and will increase wetland wildlife habitat. Additional fishery and wetland habitat will be provided by 456 ponds which have been or will be installed as a part of land treatment measures.

Wildlife resources will be adversely affected by the reduction of upland habitat associated with channel modification and construction of floodwater retarding structures. However, several hundred acres of wildlife habitat management are planned as part of the conservation land treatment measures proposed in the three projects.

7. Irreversible and Irretrievable Commitments of Resources

Installation of the two floodwater retarding structures will inundate 213 acres with water and/or sediment. In addition, 614 acres within the flood pools will be subject to periodic flooding and will require a use that is compatible with such flooding. The future without project land use of these 827 acres is estimated to be about 350 acres of pastureland, 427 acres of forest land, and 50 acres of row crops. Land to construct the dams, spillways, and borrow areas will require 60 acres. Of the 60 acres, 33 acres are forest land, 17 acres pasture, and 10 acres row crops. Two hundred and three acres of forest will be cleared for construction of the dams, sediment pools, borrow areas, and spillways. The type forest land to be cleared is mainly pine. Principal species are loblolly pine, with mixed oaks, sweet gum, and red maple. There is some timber production that will be lost from the forest land cleared. The loss of this forest land will affect wildlife. The hardwoods serve as good den areas and travel lanes for squirrel. These areas also provide good habitat for deer, turkey, and raccoon. The sediment pools and dams of the two floodwater retarding structures will inundate 1.2 miles of stream.

8. Consultation with Appropriate Federal Agencies and Review by State and Local Agencies Developing and Enforcing Environmental Standards

a. General

Shortly after application for federal assistance was made by the local sponsors, a preliminary reconnaissance was made by the Watershed Planning Party, Soil Conservation Service.

Following the reconnaissance, a meeting was attended by Soil Conservation Service personnel, local sponsors, and interested persons. The purpose of this meeting was to discuss the results of the reconnaissance and

explain that a preliminary investigation would be scheduled. Watershed problems were also discussed to ascertain the amount of protection needed.

The State Soil and Water Conservation Committee gave this project a high priority for planning. A request for planning authorization was made to the Soil Conservation Service; and planning authorization was granted in January 1969. Notification was given by letter to the various federal and state agencies that planning authorization had been granted.

Soon after planning authorization was granted, the preliminary investigations and various alternatives were developed and reviewed with local sponsors and landowners. Each proposed floodwater retarding structure site was reviewed and land rights needs were discussed in the field with project sponsors. At a meeting with the local sponsors, alternatives and objectives were agreed upon and detailed planning was initiated. Various federal and state agencies were requested to provide information or comments that might be helpful in the planning process. With the help of several federal and state agencies, the Mush Creek Watershed Work Plan was prepared.

The Bureau of Sport Fisheries and Wildlife was concerned about loss of waterfowl habitat in the area where floodwater retarding structures were planned.

To mitigate the damages to waterfowl habitat along the stream, mitigation measures were included in the design of the floodwater retarding structures. These measures are discussed in the "Environmental Setting" section of this report.

The Alabama Department of Conservation and Natural Resources and the Bureau of Sport Fisheries and Wildlife, accompanied by Soil Conservation Service personnel, made a field study of Mush Creek Watershed on May 26, 1969. These agencies suggested that wildlife gates be installed on the two structures to mitigate loss of duck habitat. The suggestion was accepted by the project sponsors and the gates will be installed.

The Environmental Protection Agency made an input into the preliminary environmental statement. This agency suggested that disposal of land clearance and construction debris be in accordance with state air pollution and solid waste regulations.

A public meeting was held in January 1971, by the local sponsors to explain land treatment, critical area treatment, and floodwater retarding structures included in the plan. Project costs and benefits and land rights required for installation of the structures were discussed during and following this meeting.

An informal field review of Mush Creek Watershed was held in April 1972. The proposed work plan and environmental statement were discussed at this meeting. No significant comments or questions were raised concerning this project at either the public meeting or informal field review.

b. Discussions and Disposition of Each Problem, Objection, or Issue Raised on the Draft Environmental Statement by Federal, State, and Local Agencies, Private Organizations and Individuals

Comments were requested from the following agencies:

Department of the Army
 Department of Commerce
 Department of Health, Education, and Welfare
 Department of the Interior
 Department of Transportation
 Environmental Protection Agency
 Federal Power Commission
 Governor of Alabama
 Alabama Development Office
 Alabama - Tombigbee Rivers Regional Planning and Development
 Commission
 South Central Alabama Development Commission

Comments were received from the following agencies:

Department of the Army
 Department of Health, Education, and Welfare
 Department of the Interior
 Department of Transportation
 Environmental Protection Agency
 Alabama Development Office
 State Soil & Water Conservation Committee
 State Department of Conservation and Natural Resources
 Alabama Geological Survey

In addition, comments were received from the following:

Mr. Bob Truett: Individual, Birmingham, Alabama
 Bradley, Arant, Rose & White: Attorneys, Birmingham, Alabama

SUMMARY OF COMMENTS AND RESPONSES

Each issue, problem, or objection is summarized and a response given on the following pages. Comments are serially numbered where agencies have

supplied multiple comments. Copies of the original letters of comment appear in Appendix B.

U. S. Department of the Army

Comment: The work plan and environmental statement are satisfactory. No conflicts between the proposed projects of the Department are foreseen.

Response: None.

U. S. Department of Health, Education, and Welfare

The Department of Health, Education, and Welfare has reviewed the work plan and environmental statement and has no comment.

U. S. Department of the Interior

1. Comment: The proposed action will not adversely affect any existing, proposed, or known potential units of the National Park System, or any known historic, natural, or environmental education sites eligible or considered potentially eligible for the National Landmark Programs.

Response: None.

2. Comment: For project compliance with the Federal Reservoir Salvage Act (P.L. 86-523), we request that the Regional Director, Southeast Region, National Park Service, 3401 Whipple Avenue, Atlanta, Georgia 30344, be kept informed of the progress of this proposal so that any necessary archeological work appropriate to the post-authorization phase can be programed for completion prior to the start of project construction.

Response: Concur. The Regional Director will be notified in accordance with the above stated Act.

3. Comment: Should parties to the work plan agreement desire to initiate early action in response to the Federal Reservoir Salvage Act, the National Park Service can assist them in arranging for any needed archeological work to be undertaken by a cooperating institution on a reimbursable basis.

Response: None.

4. Comment: Although minor quantities of stone, clay, and sand and gravel are produced in Dallas and Lowndes Counties, none of the production comes from the project area. The mineral resource base of the area should not be significantly affected by utilization of land for the flood retarding structures or by the land improvement measures.

Response: None.

5. Comment: Wildlife resources of the project area include habitat for low to moderate populations of rabbit, quail, wood duck, squirrel, dove, white-tailed deer, turkey, fox, raccoon, and other fur bearers. Songbirds and other nongame wildlife also utilize the area. The fishery value of Mush Creek and its tributaries is of low value. Sport species found in the area include bass, bluegill, and various other sunfishes, channel catfish, and crappies.

Construction of the project will inundate approximately 213 acres of upland game habitat. Increased fish and waterfowl benefits may be realized through management of the two floodwater-retarding structure permanent pools. Planned tree plantings should also benefit local wildlife.

Response: None.

6. Comment: We are pleased to note that some attention has been shown to archeological values in the development of the project. However, the statement does not explain whether the archeological survey mentioned on page 2 covered the project effects. The procedure mentioned on page 7 is indefinite, and may result in little mitigation of project effects on archeological resources. Further attention to cultural (historic, archeological, architectural) resources is needed in the environmental statement.

Response: Concur. The information given in the draft environmental statement at the two points of reference listed in the above comment has been combined, rewritten, expanded upon and set forth on pages 7 and 8 of this document.

7. Comment: The statement should indicate whether any cultural resources listed in the National Register of Historic Places will be affected by the project. The National Register is published annually and updated monthly in the "Federal Register" and should be consulted in making the initial determination. The Alabama State Historic Preservation officer should also be asked to comment on the relation between the proposal

and cultural resources -- particularly those he may deem eligible for nomination to the National Register. If any present or **potential** National Register properties will be affected, the statement should describe the steps being taken to comply with Section 106 of the National Historic Preservation Act according to the procedures published in the "Federal Register" of February 28, 1973.

Response: Concur. The statement has been modified to reflect contacts made.

8. Comment: An interdisciplinary evaluation of cultural resources in the project area should be undertaken by persons professionally trained to locate, identify, and evaluate historic, archeological, and architectural resources. Such a survey should provide information on cultural resources that will be the basis for describing them as a part of the environment, assessing project impacts upon them, developing procedures to mitigate adverse impacts, and outlining all irreversible or irretrievable commitments of cultural resources.

Response: Contacts have been made with the Alabama Historical Commission and the University of Alabama Archeological Museum. The results of these contacts are listed on page 26 of this statement.

9. Comment: The treatment of fish and wildlife resources in the environmental statement is adequate.

Response: None.

10. Comment: A 62-percent reduction in sediment load of Mush Creek is claimed on the basis of 28,000 tons/year reduction from 59,000 tons/year. The reduction would seem to be more on the order of 47 percent.

Response: Concur. The statement has been changed.

11. Comment: There is no discussion of the effect of the project on the low flow of streams other than it will "tend to increase streamflow during dry-season . . ." Some quantitative analysis should be included.

Response: Concur. The statement has been modified to more fully describe the increase in soil moisture and other streamflow increasing effects of the project. Since the expected increase in total streamflow is small, less than 5 percent, no quantitative analysis has been included.

12. Comment: The project claims a benefit by "reducing the volume of sediment, pesticides and other pollutants entering the stream." The key mechanism in this reduction is noted as increased infiltration. If this is true, then the effect would be to increase pesticide and other pollutant infiltration to the groundwater systems which support dug wells used for domestic consumption. The claim appears to be unsupported, and in our view deserves further discussion.

Response: The key mechanism in reduction of agricultural pollution is erosion control. Most erosion control is accomplished by conservation land treatment which holds the soil in place, protects the soil from rainfall impact, and slows the rate and amount of runoff. It follows that these listed affects will reduce the amount of sediment and other pollutants transported to the stream system.

For further discussion of the effects on deep groundwater see comment from Alabama Geological Survey page 26 , and discussion on page 9.

13. Comment: We do not anticipate any significant adverse environmental impacts from this project as it relates to geologic conditions.

Response: None

U. S. Department of Transportation

The Department has no comments to offer nor objections to the proposed project.

U. S. Environmental Protection Agency

Comment: The statement does not adequately discuss the temporary adverse effects of the project on water quality. During construction and until appropriate vegetation has stabilized all raw soil exposed by construction, there will be some water quality degradation due to sedimentation levels.

It is therefore recommended that the Final Statement include the following:

1. To minimize sedimentation during construction, sediment control measures in accordance with the Department of Agriculture Engineering Memorandum No. 66 will be followed.

2. During periods of critical low flow, at least as much water as enters the proposed structures will be released to provide for downstream uses and to maintain a beneficial equilibrium of biological organisms.

Response: Item (1) Concur. Statement has been altered to show that SCS Engineering Memorandum-66 will be followed.

Item (2) The streams at proposed floodwater retarding structures are intermittent and thus will have no inflow or outflow during periods of critical low flow. Since the structures have no planned consumptive use, normal flows will be unchanged; only flood flows will be altered by temporary storage above the ungated outlet structure.

Alabama Development Office

State Soil & Water Conservation Committee

Comment: We find the statement to be an accurate reflection of pertinent facts as these pertain to this watershed development proposal and further it is the Committee's carefully considered opinion that this project is urgently needed in the area involved.

Response: None.

State Department of Conservation and Natural Resources

1. Comment: On page 16, 3rd complete paragraph, first sentence: What recreational activities will the floodwater retarding structure provide? Impoundments created by the floodwater retarding structure will provide limited recreational facilities but not the structure themselves.

Response: Although the comment referred to the project work plan, the environmental statement was modified according to the suggestion.

2. Comment: On page 16, 5th complete paragraph, last sentence: This sentence is correct as far as it goes but it should include the loss of turkey and other wildlife foods as turkeys are an important wildlife species in the area and the clearing of forest land usually has a more serious effect on turkey than on deer.

Response: The comment refers to the project work plan. However, the environmental statement was modified to include this comment.

3. Comment: Paragraph 4, page 15 indicated that there are 17 landowners within the flood plains that are to benefit from structural measures. The last paragraph on page one (1) indicated that the federal costs for structural measures will be \$716,000.00. This would indicate that the Federal Government will spend an average of over \$42,125.00 tax dollars to improve the land of only 17 private landowners. Could this possibly be a typographical error?

Response: The comment again refers to the project work plan. Some thoughts on this comment are as follows. (1) Not only will 17 landowners benefit, but 25 full-time employees and their families will benefit from continued employment opportunities. (2) Installation of the project will provide about 30 man-years of employment for the local people of the area. Senate Document 97 requires watershed projects to have multi-beneficiaries.

Alabama Geological Survey

Comment: From a geologic and hydrologic standpoint, it appears that the statements on page 8, that the deep aquifers will be recharged and streamflow generally increased, are inaccurate. The impoundments will principally inundate areas that are underlain by a relatively thin mantle of alluvial materials that rest upon the dense, relatively impermeable chalk of the Selma Group which is about 500 to 700 feet thick in this area. There can be no recharge of water in the Eutaw Sand immediately underlying the chalk by these impoundments.

Response: Concur. The statement has been changed to incorporate the above comment.

Bob Truett

Comment: According to the SCS draft environmental statement the entire affected flood plain could be purchased and the landowners relocated for \$85,400 less than the cost of the proposed project. The total annual benefits of the project are estimated at \$60,700.00. But if the funds

to be spent on the project were invested at only 5% interest the annual benefits would be \$64,910.00. Based on 1972 prices your estimated cost benefit ratio is only 1.3:1.0 but the costs of accomplishing this project are increasing rapidly and the actual ratio will obviously be even less favorable. To arrive at this deceptively favorable ratio you have spread the cost and benefits out over 100 years. But American taxpayers will have to pay for the project immediately when it is done. According to your figures almost everyone now living in America will be dead before this project pays for itself and indeed it will probably never pay for itself. SCS could simply give each landowner in the area \$3,600.00 per year and this would save the taxpayers money.

Response: The project was evaluated in accordance with procedures established by Senate Document 97. An alternative of flood plain land purchase is presented on page 15 of this statement.

Bradley, Arant, Rose & White

1. Comment: We do not know exactly the type of water retarding or retention structures the SCS has in mind for this project but would like to recommend use of the so-called "dry" retarding structures, i.e. those that are designed to hold water only after periods of heavy rainfall and, thus, will not create a permanent impoundment that would inundate the bases of trees or require their cutting. As you will appreciate, this would reduce the amount of woodlands required to be cut or trees that might be killed as a result of the project. Thus, the use of such "dry" structures would be an environmental advantage for the watershed and, hence, would presumably serve to increase the benefit-cost ratio by eliminating an environmental cost.

Response: Some tree cutting would be required even if a "dry" structure were installed. The area to construct the dam, riser, emergency spillway and borrow areas would require tree cutting regardless of the type structure. Installation of wet pools will require 170 acres of forest land clearing which is less than 1 percent (.007) of the total forest land in the watershed (22,229). An environmental advantage for wet pools is the pool areas created for waterfowl. The water control gates to be installed in the structures will provide feeding

areas for waterfowl. The aesthetic values for some people will be improved by the pool areas of the structures.

2. Comment: We note that the project, from the economic point of view, is based on a 100-year project life and, since it was initially authorized in 1969 and since such a project life is being used, we understand that, according to present SCS practice, the cost will have been computed by use of a historically low rate. The use of such a rate, which would be substantially less than current rates, and a project life that does not accord with current standards will present a definite problem to those who are to review an impact statement filed with the Council on Environmental Quality. A computation of the benefit-cost ratio using a current interest rate and a current standard for the project life should be shown so that those removed from the decision-making process will be able to appraise whether it is actually desirable to carry out this project from a fiscal standpoint. Such an analysis may well indicate that without some further modification of the project that might increase the benefit-cost ratio, the project would result in an uneconomic expenditure of much needed federal funds.

Response: Project measure cost reflects a 1972 price base. The benefit-cost ratio was calculated using the applicable interest rate and evaluation period as provided by Senate Document 97.

3. Comment: We note from pages 15-16 that this project is in close proximity and is related to the Upper and Lower Big Swamp Creek Projects. We understand that those other two projects include 34 water retention structures and modification of stream channels. We would strongly urge that the SCS appraise the use of such water retarding or retention structures -- and perhaps additional ones in smaller tributary streams as well as other alternatives -- as the means of controlling flooding without use of any stream channelization. We feel this would be a most desirable alternative because of the benefits that can accrue from water retarding or retention structures as opposed to the environmental damage, as well as costs of future maintenance and other such matters, that of necessity follow from a channelization project. Since all of these projects are in the same or related watershed, if water retarding structures, land treatment measures and other alternatives alone are able to serve

the purpose in the Mush Creek Watershed, it would appear only reasonable that the same should be true as to the other two projects, particularly when considering the economic advantages of the projects against the environmental costs, most if not all of which might be eliminated by avoiding the stream channel work.

Response: The Upper Big Swamp Watershed project was authorized for installation in 1969 and Lower Big Swamp Watershed project is currently pending before the Agriculture Committee of the House of Representatives. No construction has taken place in either project. It is quite possible that some or all of the proposed channel work in these projects will be closely evaluated to see if modifications or deletions should be made to reduce environmental effects.

9. List of Appendixes

Appendix A - Comparison of Benefits and Costs for Structural Measures

Appendix B - Letters of Comment Received on the Draft Environmental Statement

Appendix C - Project Map

Approved By:

Kenneth E. Grant DEC 19 1973
 Kenneth E. Grant Date
 Administrator

APPENDIX A - COMPARISON OF BENEFITS AND COSTS FOR STRUCTURAL MEASURES

Mush Creek Watershed, Alabama

(Dollars)

Evaluation Unit	AVERAGE ANNUAL BENEFITS ^{1/}					Average Annual Cost	Benefit-Cost Ratio
	Damage Reduction	More Intensive Land Use	Redevelopment	Secondary	Total		
Floodwater Retarding Structures Nos. 2 & 5	35,000	11,900	9,000	4,800	60,700	40,400	1.5:1.0
Project Administration						5,300	
GRAND TOTAL	35,000 ^{2/}	11,900	9,000	4,800	60,700	45,700	1.3:1.0 ^{2/}

^{1/} Price base 1972

^{2/} In addition, it is estimated that land treatment measures will provide flood damage reduction benefits of \$2,100 annually.

^{3/} Based upon 5-3/8% discount rate applicable when the plan was developed. The benefit-cost ratio is 1.4:1.0 based upon current normalized prices and a discount rate of 6-7/8% which became effective on October 30, 1973, in accordance with the Water Resources Council's Principles and Standards.

March 1973

APPENDIX B

(Letters of Comment Received on Draft Environmental Statement)



DEPARTMENT OF THE ARMY
OFFICE OF THE UNDER SECRETARY
WASHINGTON, D.C. 20310

10 SEP 1973

Honorable Robert W. Long
Assistant Secretary of Agriculture
Washington, D. C. 20150

Dear Mr. Long:

In compliance with the provisions of Section 5 of Public Law 566, 83d Congress, the Administrator of the Soil Conservation Service, by letter of 21 June 1973, requested the views of the Secretary of the Army on the work plan for Mush Creek Watershed, Alabama.

We have reviewed the work plan and foresee no conflict with any projects or current proposals of this Department. The draft environmental statement is considered satisfactory.

Sincerely,

Charles R. Ford
Acting Special Assistant to the
Secretary of the Army (Civil Functions)

RECEIVED MAIL ROOM
1973 SEP 14 4 44 PM '73
SOIL CONSERVATION SERVICE
WASHINGTON, D.C.



DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
REGION IV

50 Seventh Street, N.E.
Atlanta, Georgia 30323

REGIONAL OFFICE OF
FACILITIES, ENGINEERING AND CONSTRUCTION

August 21, 1973

Re: 305-7-73

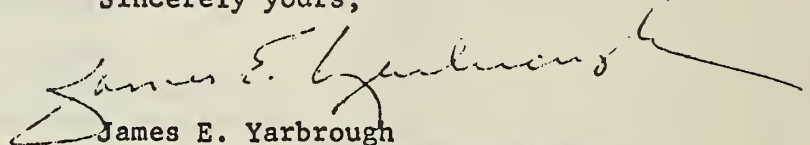
Mr. Kenneth E. Grant, Administrator
U. S. Department of Agriculture
Soil Conservation Service
Washington, D. C. 20250

Dear Mr. Grant:

Subject: Watershed Protection and Flood Prevention
Mush Creek Watershed
Dallas and Lowndes Counties, Alabama

We have reviewed the draft Environmental Impact State-
ment for this project and have no comments to offer.

Sincerely yours,


James E. Yarbrough
Regional Environmental Officer

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1973 AUG 24 PM 5:47
SOIL CONSERVATION SERVICE
WASHINGTON, D.C.



United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

In reply refer to:
PEP ER-73/872

SEP 13 1973

Dear ~~Mr.~~ Grant:

Thank you for your letter of June 21, 1973, requesting our views and comments on a work plan and draft environmental statement for the Mush Creek Watershed, Alabama.

This proposed action will not adversely affect any existing, proposed, or known potential units of the National Park System, or any known historic, natural, or environmental education sites eligible or considered potentially eligible for the National Landmark Programs.

For project compliance with the Federal Reservoir Salvage Act (P.L. 86-523), we request that the Regional Director, Southeast Region, National Park Service, 3401 Whipple Avenue, Atlanta, Georgia 30344, be kept informed of the progress of this proposal so that any necessary archeological work appropriate to the post-authorization phase can be programmed for completion prior to the start of project construction.

Should parties to the work plan agreement desire to initiate early action in response to the Federal Reservoir Salvage Act, the National Park Service can assist them in arranging for any needed archeological work to be undertaken by a cooperating institution on a reimbursable basis.

Although minor quantities of stone, clay, and sand and gravel are produced in Dallas and Lowndes Counties, none of the production comes from the project area. The mineral resource base of the area should not be significantly affected by utilization of land for the flood retarding structures or by the land improvement measures.

RECEIVED MAIL ROOM
1973 SEP 20 8:11 AM '73
SOIL CONSERVATION SERVICE
WASHINGTON, D.C.

Wildlife resources of the project area include habitat for low to moderate populations of rabbit, quail, wood duck, squirrel, dove, white-tailed deer, turkey, fox, raccoon, and other fur bearers. Songbirds and other nongame wildlife also utilize the area. The fishery value of Mush Creek and its tributaries is of low value. Sport species found in the area include bass, bluegill, and various other sunfishes, channel catfish, and crappies.

Construction of the project will inundate approximately 213 acres of upland game habitat. Increased fish and waterfowl benefits may be realized through management of the two flood-water-retarding structure permanent pools. Planned tree plantings should also benefit local wildlife.

We have completed our review of the draft environmental statement and submit the following comments for your consideration and use in preparing the final environmental statement.

Cultural Resources

We are pleased to note that some attention has been shown to archeological values in the development of the project. However, the statement does not explain whether the archeological survey mentioned on page 2 covered the project effects. The procedure mentioned on page 7 is indefinite, and may result in little mitigation of project effects on archeological resources. Further attention to cultural (historic, archeological, architectural) resources is needed in the environmental statement.

The statement should indicate whether any cultural resources listed in the National Register of Historic Places will be affected by the project. The National Register is published annually and updated monthly in the "Federal Register" and should be consulted in making the initial determination. The Alabama State Historic Preservation Officer should also be asked to comment on the relation between the proposal and cultural resources -- particularly those he may deem eligible for nomination to the National Register. If any present or potential National Register properties will be affected, the statement should describe the steps being taken to comply

with Section 106 of the National Historic Preservation Act according to the procedures published in the "Federal Register" of February 28, 1973.

An interdisciplinary evaluation of cultural resources in the project area should be undertaken by persons professionally trained to locate, identify, and evaluate historic, archeological, and architectural resources. Such a survey should provide information on cultural resources that will be the basis for describing them as a part of the environment, assessing project impacts upon them, developing procedures to mitigate adverse impacts, and outlining all irreversible or irretrievable commitments of cultural resources.

Fish and Wildlife Resources

The treatment of fish and wildlife resources in the environmental statement is adequate.

Hydrology

On the basis of data contained in the documents, there are three points which would seem to require further discussion in the impact statement.

1. On page 7, a 62-percent reduction in sediment load of Mush Creek is claimed on the basis of 28,000 tons/year reduction from 59,000 tons/year. The reduction would seem to be more on the order of 47 percent.
2. There is no discussion of the effect of the project on the low flow of streams other than it will "tend to increase streamflow during dry-seasons" Some quantitative analysis should be included.
3. The summary sheet, section V, paragraph 2, claims a benefit by "reducing the volume of sediment, pesticides, and other pollutants entering the stream." On page 8, the key mechanism in this reduction is noted as increased infiltration. If this is true, then the effect would be to increase pesticide and other pollutant infiltration to the groundwater systems which supports dug wells used for domestic consumption (p. 3). The claim appears to be unsupported, and in our view deserves further discussion.

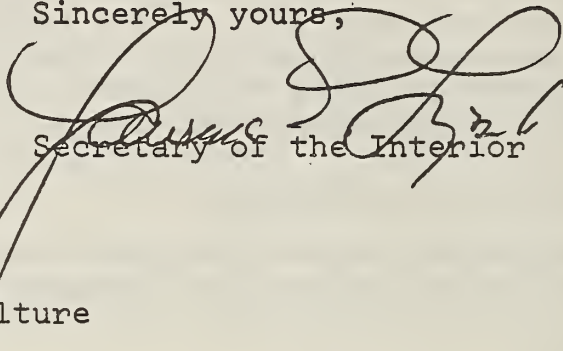
Geology

We do not anticipate any significant adverse environmental impacts from this project as it relates to geologic conditions.

We trust the foregoing comments will assist you in making your report ready for Congressional consideration.

Sincerely yours,

Assistant


Secretary of the Interior

Mr. Kenneth E. Grant
Administrator
Soil Conservation Service
U.S. Department of Agriculture
Washington, D. C. 20250



DEPARTMENT OF TRANSPORTATION
UNITED STATES COAST GUARD

MAILING ADDRESS: (G-WS/83)
U.S. COAST GUARD
400 SEVENTH STREET SW.
WASHINGTON, D.C. 20500
PHONE: (202) 426-2262

20 AUG 1973

• Mr. Kenneth E. Grant
Administrator
Soil Conservation Service
Department of Agriculture
Washington, D. C. 20250

Dear Mr. Grant:

This is in response to your letter of 21 June 1973 addressed to Admiral Bender concerning the draft environmental impact statement for the Mush Creek Watershed Project, Dallas County, Alabama.

The Department of Transportation has reviewed the material submitted. We have no comments to offer nor do we have any objection to the project.

The opportunity to review this project is appreciated.

Sincerely,

R. J. PRICE
Acting Chief of Staff, Marine
Environmental Systems

RECEIVED MAIL ROOM
1973 AUG 22 10 11 AM
U.S. COAST GUARD



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

1421 PEACHTREE ST., N. E.
ATLANTA, GEORGIA 30309

August 15, 1973

Mr. Kenneth E. Grant, Administrator
Soil Conservation Service
Washington, D. C. 20250

RECEIVED MAIL ROOM
1973 AUG 21 PM 4:15
SOIL CONSERVATION SERVICE
WASHINGTON, D.C.

Dear Mr. Grant:

We have reviewed the Draft Environmental Impact Statement for Mush Creek Watershed in Dallas and Lowndes Counties, Alabama and feel that it does not adequately discuss the temporary adverse effects of the project on water quality. During construction and until appropriate vegetation has stabilized all raw soil exposed by construction, there will be some water quality degradation due to sedimentation levels.

It is therefore recommended that the Final Statement include the following:

1. To minimize sedimentation during construction, sediment control measures in accordance with the Department of Agriculture Engineering Memorandum No. 66 will be followed.
2. During periods of critical low flow, at least as much water as enters the proposed structures will be released to provide for downstream uses and to maintain a beneficial equilibrium of biological organisms.

We would like to have five copies of the Final Environmental Impact Statement when it is available. If we can be of further assistance in any way please let us know.

Sincerely,

Frank M. Redel
David R. Hopkins
Chief, EIS Branch



STATE OF ALABAMA
ALABAMA DEVELOPMENT OFFICE

September 21, 1973

R. C. "Red" Bamberg
Director

W. M. "Bill" Rushton
Assistant Director

George C. Wallace
Governor

TO: Mr. W. B. Lingle
State Conservationist
Soil Conservation Service
P. O. Box 311
Auburn, Alabama 36830

FROM: *Michael R. Amos*
Michael R. Amos
State Clearinghouse
State Planning Division

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT

Applicant: Mush Creek Watershed Conservancy District

Project: Mush Creek Watershed Draft Environmental Impact
Statement for Dallas and Lowndes Counties

State Clearinghouse Control Number: ADO-036-73

The Draft Environmental Impact Statement for the above project has been reviewed by the appropriate State agencies in accordance with Office of Management and Budget Circular A-95, Revised

The comments received from the reviewing agencies are attached.

Please contact us if we may be of further assistance. Correspondence regarding this proposal should refer to the assigned Clearinghouse Number.

A-95/05

Attachments

Agencies contacted for comment:

Alabama-Tombigbee Rivers Regional Planning & Development Commission
Central Alabama Regional Planning and Development Commission
Conservation and Natural Resources
Soil & Water Conservation
Geological Survey of Alabama
Alabama Development Office - Hyde

REQUEST FOR REVIEW OF ENVIRONMENTAL IMPACT STATEMENT

TO: Mr. Wilbur B. Nolen, Jr.
Soil & Water Conservation

CH Number ADO-036-73

Applicant Mush Creek Watershed Conservancy Dis-
trict

Program Mush Creek Watershed Draft Environmental
Impact Statement for Dallas and Lowndes Counties

DATE: July 12, 1973

Return Prior to: August 12, 1973
Date

Please review the attached environmental impact statement and indicate your comment with respect to any environmental impact involved.

Comments: (Please check one block.)

No comment (Environmental impact statement is in order and no additional comments are offered.)

Comments (Elaborate below.)

The State Soil and Water Conservation Committee has reviewed the "Draft Environmental Impact Statement," as same pertains to the proposed "Mush Creek Watershed", located
Comment here: *in Dallas and Lowndes Counties, Alabama.*

The State Committee approved this work plan on October 26, 1967 and our comments, therefore, are directed to the "Impact Statement".

We find the statement to be an accurate reflection of pertinent facts as these pertain to this watershed development proposal and further it is the Committee's carefully considered opinion that this project is urgently needed in the area involved.



STATE SOIL & WATER CONSERVATION COMMITTEE

Wilbur B. Nolen

Signature

EXECUTIVE SECRETARY

Please Return Original to:

Alabama Development Office
Office of State Planning
State Clearinghouse
State Office Building
Montgomery, Alabama 36104

FORM CH-2a
8/71

REQUEST FOR REVIEW OF ENVIRONMENTAL IMPACT STATEMENT

TO: Mr. Reynolds W. Trasher
Conservation and Natural Resources

CH Number ADO-036-73

Applicant Mush Creek Watershed Conservancy District

Program Mush Creek Watershed Draft Environmental Impact Statement for Dallas and Lowndes Counties

DATE: July 12, 1973

Return Prior to: August 12, 1973
Date

Please review the attached environmental impact statement and indicate your comment with respect to any environmental impact involved.

Comments: (Please check one block.)

No comment (Environmental impact statement is in order and no additional comments are offered.)

Comments (Elaborate below.)

Comment here:

See attached from S & F Div.



Reynolds W. Trasher
Signature

Please Return Original to:

Alabama Development Office
Office of State Planning
State Clearinghouse
State Office Building
Montgomery, Alabama 36104

FORM CH-2a
8/71

STATE OF ALABAMA
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES

64 North Union Street - Montgomery, Alabama 36104

GEORGE C. WALLACE
GOVERNOR
CLAUDE D. KELLEY
COMMISSIONER

July 23, 1973

DIVISION OF GAME and FISH
CHARLES D. KELLEY, DIRECTOR

MEMORANDUM

TO: Mr. Reynolds W. Thrasher, Chief
Outdoor Recreation Section

FROM: Ralph H. Allen, Jr., Chief *Ralph H. Allen Jr*
Game Management Section

SUBJECT: Comments on Watershed Work Plan for Mush Creek in
Dallas and Lowndes County

The material supplied to our Division was the work plan for the Mush Creek Watershed and not a draft of the Environmental Impact Statement. The following comments are on the Mush Creek Watershed and not on an Environmental Impact Statement.

On page 16, 3rd complete paragraph, first sentence: What recreational activities will the floodwater retarding structure provide? Impoundments created by the floodwater retarding structure will provide limited recreational facilities but not the structure themselves.

On page 16, 5th complete paragraph, last sentence: This sentence is correct as far as it goes but it should include the loss of turkey and other wildlife foods as turkeys are an important wildlife species in the area and the clearing of forest land usually has a more serious effect on turkey than on deer.

Paragraph 4, page 15 indicated that there are 17 landowners within the flood plains that are to benefit from structural measures. The last paragraph on page one (1) indicates that the federal costs for structural measures will be \$716,000.00. This would indicate that the Federal Government will spend an average of over \$42,125.00 tax dollars to improve the land of only 17 private landowners. Could this possibly be a typographical error?

RHA:rle

APPROVED: *Archie D. Hooper*

Archie D. Hooper, Assistant Director
Game and Fish Division

2630 Cahaba Road
Birmingham, Alabama 35223
August 20, 1973

Mr. W. B. Lingle
U. S. D. A. Soil Conservation Service
P. O. Box 311
Auburn, Alabama 36830

Dear Mr. Lingle:

I have examined your draft environmental statement on Mush Creek Watershed in Lowndes and Dallas Counties and hereby offer the following comments.

Apparently no channelization is involved and the overall environmental results of the proposed development seem to be positive. Therefore I find no objections to the project on environmental grounds.

The economic aspects of the project, on the other hand, are outrageous. I find it incredible that SCS could even consider a project so obviously wasteful of taxpayers' money.

According to the SCS draft environmental statement the entire affected flood plain could be purchased and the land owners relocated for \$85,400 less than the cost of the proposed project. The total annual benefits of the project are estimated at \$60,700.00. But if the funds to be spent on the project were invested at only 5% interest the annual benefits would be \$64,910.00. Based on 1972 prices your estimated cost benefit ratio is only 1.3:1.0 but the costs of accomplishing this project are increasing rapidly and the actual ratio will obviously be even less favorable. To arrive at this deceptively favorable ratio you have spread the cost and benefits out over 100 years. But American taxpayers will have to pay for the project immediately when it is done. According to your figures almost everyone now living in America will be dead before this project pays for itself and indeed it will probably never pay for itself. S.C.S. could simply give each landowner in the area \$3,600.00 per year and this would save the taxpayers money.

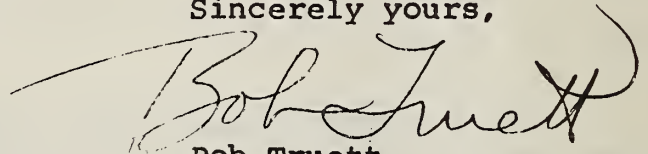
Mr. W. B. Lingle

Page -2-

August 20, 1973

How long must American taxpayers keep paying for these foolish pork barrel projects? No financial institution in the world would lend the money for this project because it is obviously economically ridiculous.

Sincerely yours,

A handwritten signature in cursive script that reads "Bob Truett". The signature is written in dark ink and is positioned above the printed name.

Bob Truett

FBT/lh

cc: Senator Allen
Senator Sparkman

REQUEST FOR REVIEW OF ENVIRONMENTAL IMPACT STATEMENT

TO: Mr. Philip L. Moreaux
Geological Survey of Alabama

CH Number ADO-036-73

Applicant Mush Creek Watershed Conservancy
District

Program Mush Creek Watershed Draft Environmental
Impact Statement for Dallas and Lowndes Counties

DATE: July 12, 1973

Return Prior to: August 12, 1973
Date

Please review the attached environmental impact statement and indicate your comment with respect to any environmental impact involved.

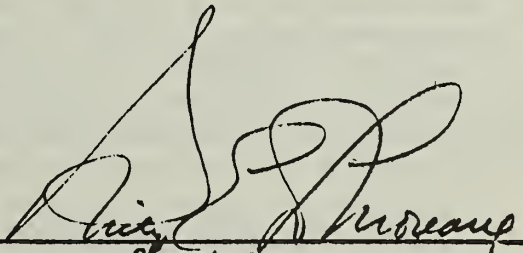
Comments: (Please check one block.)

- No comment (Environmental impact statement is in order and no additional comments are offered.)
- Comments (Elaborate below.)



Comment here:

FROM A GEOLOGIC AND HYDROLOGIC STANDPOINT, IT APPEARS THAT THE STATEMENTS ON PAGE 8, THAT THE DEEP AQUIFERS WILL BE RECHARGED AND STREAMFLOW GENERALLY INCREASED, ARE INACCURATE. THE IMPOUNDMENTS WILL PRINCIPALLY INUNDATE AREAS THAT ARE UNDERLAIN BY A RELATIVELY THIN MANTLE OF ALLUVIAL MATERIALS THAT REST UPON THE DENSE, RELATIVELY IMPERMEABLE CHALK OF THE SELMA GROUP WHICH IS ABOUT 500 TO 700 FEET THICK IN THIS AREA. THERE CAN BE NO RECHARGE OF WATER IN THE EUTAW SAND IMMEDIATELY UNDERLYING THE CHALK BY THESE IMPOUNDMENTS.


Signature

Please Return Original to:

Alabama Development Office
Office of State Planning
State Clearinghouse
State Office Building
Montgomery, Alabama 36104

FORM CH-2a
8/71

BRADLEY, ARANT, ROSE & WHITE
1500 Brown-Marx Building
Birmingham, Alabama 35203

September 18, 1973

Mr. W. B. Lingle, State Conservationist
Soil Conservation Service
U. S. Department of Agriculture
P. O. Box 311
Auburn, Alabama 36830

Re: Mush Creek Watershed Project --
Lowndes and Dallas Counties, Alabama

Dear Mr. Lingle:

Thank you very much for your letter of August 2 regarding comments on the draft environmental impact statement for the above watershed project. However, for some reason we did not receive it until August 7 and, because I have had to be out of the city at various times since then, we were not able to submit our comments by the August 18 date mentioned in your letter. Nevertheless, we do appreciate your consideration and, since our comments are not unduly lengthy, are sending them to you now so that you will have them for use in preparation of the final environmental impact statement.

At the outset, we should like to compliment the Soil Conservation Service for undertaking this flood control project by the use of water retention structures and land treatment measures without stream channel work. We feel that this is most commendable in keeping with the desirability of preserving the water resources of the watershed and protecting downstream areas against increased flooding and sedimentation resulting from erosion. This is, of course, as you well know, emphasized by your motto of keeping the raindrop where it falls, with which practice we are certainly in accord.

We do, however, have some comments which we feel should be taken into consideration in formulation of the final impact statement, as follows:

(1) Type of Water Retention Structures. We do not know exactly the type of water retarding or retention structures

the SCS has in mind for this project but would like to recommend use of the so-called "dry" retarding structures, i.e. those that are designed to hold water only after periods of heavy rainfall and, thus, will not create a permanent impoundment that would inundate the bases of trees or require their cutting. As you will appreciate, this would reduce the amount of woodlands required to be cut or trees that might be killed as a result of the project. Thus, the use of such "dry" structures would be an environmental advantage for the watershed and, hence, would presumably serve to increase the benefit-cost ratio by eliminating an environmental cost.

(2) Discount Rate and Project Life. We note that the project, from the economic point of view, is based on a 100-year project life and, since it was initially authorized in 1969 and since such a project life is being used, we understand that, according to present SCS practice, the cost will have been computed by use of an historically low rate. The use of such a rate, which would be substantially less than current rates, and a project life that does not accord with current standards will present a definite problem to those who are to review an impact statement filed with the Council on Environmental Quality. A computation of the benefit-cost ratio using a current interest rate and a current standard for the project life should be shown so that those removed from the decision-making process will be able to appraise whether it is actually desirable to carry out this project from a fiscal standpoint. Such an analysis may well indicate that without some further modification of the project that might increase the benefit-cost ratio, the project would result in an uneconomic expenditure of much needed federal funds.

(3) Cumulative Impact and Consideration of Other Projects. We note from pages 15-16 that this project is in close proximity and is related to the Upper and Lower Big Swamp Creek Projects. We understand that those other two projects include 34 water retention structures and modification of stream channels. We would strongly urge that the SCS appraise the use of such water retarding or retention structures -- and perhaps additional ones in smaller tributary streams as well as other alternatives -- as the means of controlling flooding without use of any stream channelization. We feel this would be a most desirable alternative because of the benefits that can accrue from water retarding or retention structures as opposed

Mr. W. B. Lingle, State Conservationist
September 18, 1973
Page Three

to the environmental damage, as well as costs of future maintenance and other such matters, that of necessity follow from a channelization project. Since all of these projects are in the same or related watersheds, if water retarding structures, land treatment measures and other alternatives alone are able to serve the purpose in the Mush Creek Watershed, it would appear only reasonable that the same should be true as to the other two projects, particularly when considering the economic advantages of the projects against the environmental costs, most if not all of which might be eliminated by avoiding the stream channel work.

We appreciate the opportunity of submitting these comments and hope very much you will be able to put them into effect. In accordance with Paragraph 10 of the CEQ Guidelines, we are sending ten copies (one signed and the other nine conformed) to the CEQ and are sending ten extra copies to you for your convenience in including them with the final impact statement. Your consideration of the above comments will be greatly appreciated.

Sincerely yours,

Robert R. Reid, Jr.
s/ Robert R. Reid, Jr.
Robert R. Reid, Jr.

RRR:pm

